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ABSTRACT

The aim of this study was to investigate the implementation of modern mathematics in the primary schools of Somalia. In particular, three concerns were addressed: (1) teachers' confidence and ability in teaching mathematics; (2) students' interest in mathematics; and (3) students' examination performance in mathematics. Subjects were 30 teachers and 150 pupils in Primary One (age 8) in four schools in Mogadishu and Afgoye. Observations, teachers' notes, interviews, questionnaires (for teachers), and tests (for students) were used. The results are reported in terms of: (1) class size (only 10 percent of the classes had an enrollment of less than 50); (2) teachers' qualifications (only two-thirds had attended the in-service course in mathematics) and achievement of students and teachers (poor); (3) lesson preparation; (4) classroom evaluation; and (5) confidence and ability of teachers. Recommendations suggest that a training course needs to be carefully planned, and some basic characteristics are listed. Appended are the instruments used in the study. (MNS)

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IBRAHIM JEYLANI MOHAMED :

INVESTIGATION OF PROBLEMS OF IMPLEMENTING CURRICULUM IN PRIMARY SCHOOLS IN SOMALIA.

ACE Project

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ACO BASIC TRAINING COURSE IN SYSTEMATIC CURRICULUM DEVELOPMENT

1982/83

OI

PROJECT PHASE THREE

TOPIC

INVESTIGATION OF PROBLEMS OF IMPLEMENTING MATHEMATICS CURRICULUM IN PRIMARY SCHOOLS IN SOMALIA

BY

IBRAHIM JEYLANI MOHAMED

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LIST OF TABLES

Table I ; Sample of Schools.

Table 1 : Class Size.

Table 2 : Teachers by Qualification

Table 3 : The Effect of Math on Students Examination Performance Years 1981 / 82

Table 4 : The Effect of Math on Teachers Examination Performance or Teachers Examination in The Year 1981 / (T.E.E.).

Table 5 : Teachers Rating on Lesson Notes.

Table 6 : Rating of Class- room Enviroment.

TABLE OF CONTENTS

ACKNOWLEDGEMENT

LIST OF TABLES

CHAPTER I : A = Introduction

B = General Background

1.3 - The Revolutionary era

1.4 - The Problem

1.5 - Purpose of the Study

CHAPTER II :

2.1 - Methodology

2.2 - Instruments

2.3 - Data Collection

2.4 - Data Analysis and Discussion

CHAPTER III:

3.1 - Class - Size

3.2 - Teachers by Qualification

3.3 - Lesson Preparation

3.4 - Class - room Evaluation

3.5 - Confidence and Ability of the Teachers

CHAPTER IV:

A - The Problem

B - Findings

C - Recommendations

TOPIC

Investigation of prblems of implementing Mathematics curriculum in Primary Schools in Somalia.

A- Introduction:

Educational programmes developed in Somalia during the colonial era were restricted to the cities and towns. The rural country side where the majority of the Somali live on the other hand few or no schools. Under the colonial system Somalia was divided into two , British and Italian regions. The Educational system therefore differed in each of these two regions, the content of instruction in each region however was so theoretical that it could not produce people with practical knowldge. Furthermore the medium of instruction was either Italian or English depending upon the region. There were few teachers in either regions and those who were available were mostly unqualified.

When the country attained its independence in July 1960, the two inherited educational systems were not immediately changed and integrated because of political, social and economic constraints. In 1963, however the two educational systems were reviewed and integrated. Immediately the new Republic laid down a new five year plan of Educational system. Some of the components of the plan were as follows:-

1- primary education was made seven years.
2- secondry education was made four years.
3- Arabic was made the medium of instruction for lower primary levels.
4- English became the medium of instruction for upper primary levels.
5- It was further planned that the medium of instruction should eventually be Somali language.
6- It was also planned that school curriculum should be based on Somali culture and on its social, political, and economic aspects and emphasised in the national education objectives.

A new curriculum has consequently been developed and introduced into primary schools in the country, this new mathematics curriculum is based upon a new approach to mathematics teaching. The new approach presents mathematics as a dead subject which is painful to learn. It therefore takes all the joy and excitement out of learning the subject. Because the new mathematics is based on a foreign culture and examples it do is essentially meaningless to student and to the Somali society in general.

There are not enough text-books and qualified teachers who have enough experience for teaching the new mathematics. Available information gathered tended to confirm that infact what Somali needed was the traditional mathematics rather than the new mathematics. The later was not practical enough for the needs of the majority of the Somali students only required the type of mathematics that would enable them to solve their day to day problems.

B- GENERAL BACKGROUND.

Educational programmes developed in Somalia during the colonial era were restricted to the big cities, to produce people as interpreters, clerks and gate keepers. Knowldge was in the hands of few . However when the country attained its indepeddence the newly born Republic inherited two different media of instruction, and two different educational systems.

The unification of the two regions faced many problems based on the different languages of instruction in both regimes. The problem of medium instruction became prominent. However this was the first and major problem to be solved before the unification of the two regions of the country could be complete.

1.3. THE REVOLUTIONARY ERA.

The transformation of Somali has been going on since 1969. Without a proper educational foundation no country can claim to have progressed towards economic development since education is a key factor of such progress.

To adjust education to the country's development, the revolutionary government framed new objectives of education. These consisted of the following:

2- Universal free primary education for all childern between 6 & 14 years of age was established.

3- Education was democratized to make free and available throughout the country, in order to put in action the realization that education is the fundamental right of all the people and not for the privileged few of the society.

4- A conscious attempt was made at Somalization of education . The medium of instruction to be Somali language, the curriculum and school tex-books were to have Somali cultural background.

5- Programmes in vacational education was insisted in order to create a skilled man-power that could play a region role in the socio-economic development of the country.

1.4. THE PROBLEM.

In Somalia a Universal primary education was introduced in 1975. Thousands of childern are however not yet receiving the kind of education which enable them to play their role in the building of the new society. The quantitative expansion in education has shown a disqueting development with regard to quality. The problems that therefore affect the success of the implementation of math curriculum in the primary schools are as follows:

1- Classes are over crowded.
2- Lack of visual aids.
3- Lack of enough text-books in the schools.
4- The Training of the teachers of the primary schools is not well planned.
5- Language problem still exists.

These problems have hence tended to reduce the intrest of the students in the leaving of mathematics.

1.5. PURPOSE OF THE STUDY.

Modern mathematics was first introduced in Somalia in 1972. The aim of this study is to investigate the implimentation of moderen mathematics in the primary schools.

Specifically this study will do the following:

1- To investigate the teachers -a- confidence and -b- their ability to teach modern mathematics.

2- To find out the intrest of the students towards new mathematics.

3- To investigate the effect of the maths on pupil examination performance.

These criteria are used as the basis for measuring the implementation of math curriculum in the primary schools in Somalia.

CHAPTER II

2.1. METHODOLOGY

The subjects of the study was the pupils of primary one and the teachers responsible for teaching mathematics in primary one, of the sample schools.

Headmasters and supervisors of teachers were also included in the study.

The pupils were a mixture of boys and girls, 8 years of age, and the teachers were all trained teachers who have some experience in the field of teaching mathematics in primary one.

Pupils were selected from schools in Mogadishu and Afgoye which is a district about 30 km. from Mogadishu. Afgoye is a rural area, being both agricultural and pastoral.

In administering the research instruments, the investigator visited each of the sample schools to carry out this investigation.

The purpose and procedure of the studies were explained to both pupils and teachers.

In collecting information from the schools the first procedure was observed and assessed the teaching of mathematics. The teachers notes were examined to find out the learning activities specified for the class as well as practical examples used by the teachers was further assessed in terms of his/her use of blackboard and his/her ability to arouse the interest of the pupils. Besides this, the class-room enviroment as its size were observed.

After the observation the investigator was administering a test when the the teacher completed his questionaire.

All the instruments were administered by the investigator himself in order to check if there is a misunderstanding and also to maximize returns. Names of the schools selected :

a)- Primary school A.
b)- Primary school B.
c)- Primary school C.
d)- Primary school D.

Primary schools A and B are in Mogadishu, but C and D primary schools are in district Afgoye.

Table one shows schools and number of pupils selected in the study.

Table I

Sample of Schools

Names of schools	Num. of P. Studied	Total N. of P. St/ed.	Location.
Primary Sch. A	1	40	Mogadishu
Primary Sch. B	2	50	Mohadishu
Primary Sch. C.	1	30	Afgoye
Primary Sch. D	1	30	Afgoye
Total	5	150	-

2.2. INSTRUMENTS :

In order that the researcher had sufficient data, this survey was used by observation, interview, questionaires and tests. The exact test of these research instruments had been shown in appendices one, two and three.

Written tests were used as well as the questionaires on teachers to evaluate their confidence in their abiiity to teach modern mathematics.

The questionaire for teachers had been introduced to the teachers. They teachers were asked to answer these questions. They informed that the information they provided was useful and treated in the strictest confidence. These items of the questionaire elicit information on the effect of the new mathematics on the present as well as later performance of pupils in the secondary schools. The items will also seek information on the experience and qualification of the teachers and their confidence in their ability to teach mathematics in primary one. Other uses which were dealt by the questionaire include the teacher's mastery of the content, topics to be taught, their ability to understand and use hand-book, visual aids etc.

In order to facilitate the data collection the questionaire was short and of the closed type.

The achievement test used in this study was administered to the pupils of primary one alone as mentioned above. The test was constructed by the investigator.

The purpose of the test is to assess the extent to which the pupils in primary one have attained the prescribed objectives of mathematics course as well as their interest in mathematics.

In constructing the test reference was made to the objectives of primary one syllabus. Some of the objectives of the syllabus as follows:

1- Count the number from 1 to 100.

2- Write any numeral for the written whole number from 1 to 50.

3- Write and say the whole numbers preceding or coming after any whole number between 1 and 50.

4- Add, subtract, divide and multiply whole numbers from 1 to 10.

5- Identify triangles and squares.

The test was administered in four schools: two rural and two urban.

The investigator used test papers written in Somali language then translated into English language.

Because of shortage of time the investigator used oral questions and the students were warned not to short out answers but to raise their hands if they new the answer of the question. These oral short questions were in Somali language.

The sitting arrangements was not disturbed.

2.3. DATA COLLECTION:

Research instruments to be used to collect data are as follows:

(i) Questionaire for Primary one Teachers:

The teachers had been given the questionaire to copplete during the time that researcher is busy asking questions from the students and administering the test. Before a questionaire was accepted from a teacher the researcher studied the items in the questionaire if they were understood and well responded. All questions were collected by the researcher himself. The questionaire is in appendix I.

THE TEST.

The test for the pupils was administered by the researcher himself, and he will make sure that the questions were well understood by the pupils. The items were written in Somali language.

When one question was asked the researcher looked at the proportion of the class with their hands up and then took note of this percentage . For instance if ten pupils raised their hands and the first pupil

who was called got the answer (item) correct, the percentage of the pupils who got the answer correct was the total of percantage pupils of all who raised up thier hands.

On the other hand if the first answer was correct and if the correct answer was provided in the second attempt then the percentage of the pupils who got the answer was 2/3 of total number who raised their hands. Only two attempts were allowed on each question. It was quite impossible to obtain marks for each and every child because of time constraints and technical problems involved in constructing and administering the test at this level.

2.4. DATA ANALYSIS AND DISCUSSION.

Since the concept of implementation of a curriculum is wide, the data collected for this study was analysed qualitatively as shown in the table below:

Teachers	Level of Study		Inservice Courses	
	Beyond F. 4.	Below F.4.	Attended 1977-79	Attended 1981-82
Trained N.	6 (20%)	24 (80%)	11 (36.6%)	8(26.6%)
Untrained N.	-	-	-	-

Table one shows teachers qualification with regards to professional training and also academic background in mathematics.

Training is necessary to develop and sharpen skills, but teacher training in Somalia, whether inservice or pre-service were generally not well planned. The relationship between the ideal objectives of the training programmes and the actual outcomes of the trainees were not complebentary.

CHAPTER III

DATA ANALYSIS AND DISCUSSION.

3.1. Class - Size.

Of the 20 class-room studied, only 10% had a roll of less than 50. 40 % had a roll between 50 and 60. And 50% had a roll of 60 and over (see table 1, below). This shows that over 90% of the class-rooms involved in this study had over 50 children with them.

Table 1

Class - Sizes

Class - roll	. Number of classes in sample
Less than 40.	- (0%)
40 - 44	- (0%)
45 - 49	2 (10%)
50 - 54	5 (25%)
55 - 59	9 (45%)
59 . . .	4 (20%)

A survey on the differences between small and large classes was carried out by M.N.Olsen, in 1977, in the U.S.A. The findings of this survey highlighted the relation of indicators of quality of classroom process to class-size .

The mean score of indicators of quality decreased with the increase in class-size, both in elementary and secondary schools.

As is well known, the pupils in a class differ amongst themselves in many ways, some are bright, better motivated and some are backword students. If democratization of education means anything, such individual differences, among many others must be considered in the class-room situation. It is common to observe that children in large class tend to be more devant, that is difruptive in behaviour, because the larger the class, the less impact the teacher has on individual students, since it is then impossible to give close attention to each pupil.

It is not difficult to appriciate the negative influence large classes have on the teaching and, in effect, learning of mathematics in the primary schools. Modern mathematics are actively orientated; instead of propagating rote learning, the teacher should ensure that the child comprehends the reality behind the attraction and not merely simply manipulate numbers.

Table 2

3.2. Teachers by Qualification

Teachers.	Level of the study.		Inservice Courses	
	studied math. beyond F. IV	studied math. below F. IV	Attended 1977/79 inservice courses for P.T.	Attended 1981/82 Inservice course for P.T.
Trained Teacher N. 30	6 (20%)	24 (80%)	11 (36.6%)	8 (26.6%)
Untrained Teacher	0	0	0	0

Table 2 shows teachers qualifications with regards professionan training and also accademic backgreund in mathematics, since the twe are complementary aspects of teachers preparation for effective teaching. All the teachers involved of the study were qualified, that is, they had undergone an elementary teacher training course successfully. unfavorable situation is the accurance that only 19 of the 30 teachers had attended the inservice course. 80% of the teachers in the primary schools rate their achievement in mathematics generally very low with respect to port-primary mathematics. Cage and Berliner (1975) commented on such shortcoming of taechers thus; " The teacher cannot present what students need to know, cannot explain puzzling matters, cannot ask enlighting questions, and so on, unless he or she is fully at home with the subject at a level for in advance of students."

Professionalism in teaching requires a lifelong commetment to trying to improve one's teaching techniques and understanding of the subject taught . Training is necessary to develop and sharpen skills, but teacher training in Somalia whether inservice or pre-service, in generally not well planned; the relationship between the ideal objectives of the training programme and the actual outcomes of the trainees are not complementary.

Then the teachers in the primary schools feel the inservice courses were not long enough, were too theoretical and needed further training in both content and methods. The courses of mathematics which they had in the early days of the introduction of modern math to the institute did not prepare them adequately for actually problem of teaching in the primary schools. They will appriciate more further training with emphasis on practical work and preparation of visual aids.

Table 3

The effect of math on students examination performance on the years 1981 - 82.

Religion %	Math 150	Saynisis %	History %	Somali/Civics %
71 (60%)	85 (65%)	63 (75%)	58 (45%)	96 (90%)
43	55	57	40	50
50	72	48	42	70
45	57	47	58	80
40	65	62	36	80
45	52	57	42	80
65	62	50	44	69
65	82	50	48	40
88	87	57	57	78
50	82	60	48	65
40	82	50	46	80
60	92	62	42	72
40	92	66	60	70
60	102	58	51	58
55	72	62	52	83
45	82	60	52	65
17	94	29	11	72
55	87	58	51	56
18	107	24	46	39
73	95	40	54	68

Table 4

The effesct of math on teachers examination performance of Teachers Evaluation exam in the year 1981 (P.T).

Eng. 100%	Somali 100%	Religion 50%	Edu 50%	Physics 50%	Bio. 50%	Chem. 50%	Math 100%	His. 50%	Geo 50%
65	39	26	39	04	08	11	14	26	19½
64	65	35	38	11	18	12	26	29	25
73	64	30	47	07	17	16½	24	27	26
51	50	27½	35	18	07	11	26	27	16
52	59	29	35	16	14	33	28½	33	21½
54	56	25½	35	11	14	21	14	38	28
75	37	26½	23	07	13	33	05	28	13
75	54	08½	22	06	08	06	12	20	11½
78	54	15½	22	06	04	13½	13	22	14½
40	49	05	19	06	07	11	13	16	08
49	46	-	25	05	11	11	07	19	-
56	60	15½	21	11	12	11	10	20	14
54	47	33	37	10	24	09	22	28	18½
63	56	22	26	5½	15	09	16	25	19½
58	52	17	23	05	11	11½	16	26	15½
50	49	24	29	00	11	11	17	30	16½
57	50	23	33	07	20	30	41	30	17½
65	61	20	42	15	20	29	40	34	24
52	05	14	21	07	11	16	20	29	10
—	52	30	46	14	12	30	24	30	21½

Table 4

Percentage of Each Subject.

English	Somali	Religion	Edu.	Phy.	Bio.	Chem.	Math.	His.	Geog.
100%	100%	50%	50%	50%	50%	50%	100%	50%	50%
85% Pass	60% Pass	45% "	65% "	0% "	0% "	25% "	0% "	75% "	15% "

The pass mark of each subject is 50%. The above table is the result of the evaluation exam of the teachers in the year 1981. In Somalia every three years there is an standard examination for all the teachers in the primary schools with three years teaching experience. If the teacher passes this exam he/she will either have a promotion of one grade up, or they will gain entry to the College of Education in order to continue higer education and become secondary teachers.

One thing quite good in our educational system is that upward mobility is easy, many present teachers in the secondary schools used to be former primary schools teachers. At a time when the status of the teaching profession is being eroded by the meagre wages and the difficult workingconditions especially at the primary level, many primary school teachers are eager for promotion, so as to teach in a secondary school where classes are comparitively less crowded and being a teacher in a secondary school you earn a little more money.

Let us come to analyse the table above (3), the percentage of the subjects of such as Physics, Biology and Math are Zero, none of 20 teachers have passed this subject. This means that these subjects affected the teachers examinations performance.

This bad performance came from the training given by the teachers when they are in the institutes. Actually the length of the training was one year but later in 1980 it has been turned to be two years for the primary teachers.

The quality of education largely depends on the quality of the teaching force. There used to be a time when teachers of math were quite satisfied with their performance in math and also with the students performance in math and many other subjects, then after the written of Somali language and Universal education in the primary schools, then came the sereous shortage of teachers in the primary schools. As a permanent remedy to the situation young teachers had to be recriuted in the institutes to train.

teachers for the primary schools.

The curriculum for such courses was not clear, no specific objectives having been outlined. Persons doing variety of educational jobs hava testified that statements of objectives are essential or atleast helpful. In his influential book:*"Constructing achievement tests " R R.W. Tyler (1934) asserted that the formulation of objectives is the necessary first step in developing tests.*Cagne (1964) noted that "In military training the specification of objectives was particularly necessary because of the close correspodence between training and actual job performance.
Thus the clearer the objectives, the better trained were the technicians who received the training".

Obviousely, the lack of clear objectives in the teaching of the math in Somalia seriously accounts for the poor performance put up so far by both the students and teachers. With objectives you can evaluate quite easily and determine where you have failed and why. unless they formulate their objectives teachers tend to be concerned merely with the content of instruction and to ignore what the students should learn to do with that content. If the "What to do is ignored tend to assume that they need to memorize content.

The first step in this direction would be to set up a maths teaching department in the teacher training institutes. A national seminar would be held to work out realistic and specific goals for the preparation of maths teachers. Workshops should then be held regularly to up-date teachers in the field as to the correct approach to maths. This is not an easy task but a begining must be made some where.

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* " Constructing achievements test R.W.Tayler (1934) "
In his influential book.

* "Cagne 1964, in his book of military training".

3.3. Lesson Preparation.

After studing the phenoména of class size, teachers qualification and experience, and the effect of math on teachers and students examination performance , all of which have an impact on effective implementation, the researcher (Investigator) then looked for more direct information concerning the teachers preparation and effective communication during the teaching process. Such information was scored by the researcher using and observation schedule that enumerated criteria for rating teachers on their notes, and means of comminicating with peoples during the course of the lessons observed. Teachers were rated on five -point scale (4,3,2,1,0). Interpreted as very good, good, average, poor and very poor.

TABLE 5

Teachers Rating on Lesson Notes.

Criteria	Rating				
	0	1	2	3	4
Relatedness lesson objectives to the unit.	10	10	6	4	
Appropriate choice of teaching aids	20	5	5		
Appropriate choice of teaching/learning activities	13	13	4		
Appropriate choice of practice examples	6	21	3		
Appropriate choice of evaluation excercises	14	13	2	1	

Of the 30 teachers whose lesson notes were inspected and rated, none was rated very good in any of the five categories considered (Table 5) and only four was rated good. With regards to relatedness lesson objectives to the unit. And there is only one was rated good with regards appropriate choice of evaluation excercises. 33.3% of the teachers were rated poor with regards to the relatedness lesson objectives to the unit objective of the course, and about 67% rated very poor with respect to their proper choice of teching aids. Over 70% rated poor with respect to the appropriate choice of practice examples and 43.3% rated poor with respect to the use of appropriate choice of evaluation excercises.

From these results it indicates that teachers do not use teachers guide (There is no teachers guide)to prepare their lessons: Lesson objectives do not relate to the unit objectives of the course intended to be taught in the schools and recomended teaching materials are not used. Besides, the suggested lesson activities and evaluation exercises are not followed and the practice exercises set for people are inapropriate and there is no answer for the exercises, In the primary schools many teachers do not give serius attention to preparation of their lesson of math. As a result of inproper lesson planning, and un-preparedness on the part of the teachers ; lessons are bound to unsuccessful.

3.4. Class-room Evaluation.

In rating the envirement of the class-rooms involved in the study, the investigater has observed on the attractiveness of the classroom, its relative size, suitibility of seaking arrangement and availability of neccessary teaching aids.

Table (6) shows the results that ensured .

TABLE 6.

Relating of Classroom Envirement.

Criteria	Rating				
	0	1	2	3	4
Attractiveness of classroom (Ventilation, walls, lighting etc.)		14	4	2	
Size of classroom	4	3	12	1	
Suitibility of sitting arrangement	11	4	5		
Availabflity of neccessary teaching aids	-	-	-	-	

Of the 20 classes observed by the investigator with respect to attractiveness of class. 47% of the classes were very poor. And with respect to the size of classroom 60% was average. For the majority of the classroom 63% sitting arrangement was suitable to facilitate effective interaction or to implement the curriculum as to change the objectives into the classroom activities.

3.5. Confidence and ability of the teachers.

One of the activities of this study is to investigate teachers confidence and ability to teach modern maths. Data collection and anlysis was not regarded as appropriate in this case as it is felt that responses to such questions would not be reliable. Teachers would consider themselves being evaluated and thus would rate their confidence and ability as high, even though classroom performance and student attainment would indicate otherwise.

It can be stated as a generalization that one is confident when teaching content that has been mastered. The fact is to-day that the majority of teachers have not mastered the content of maths therefore cannot teach it (see table 4) for evidence of teacher ability in maths.

However a teacher who is not sure of his maths can be helped to a great extent by detailed, self-instructional teachers guides. These are not available and therefore the teacher is left stranded.

Teacher training crucial, both in the form of pre-service and inservece courses. Here again, there are no specific maths teaching/methodlogy courses. Often because math teachers at teacher training institutes have not taught at primary level and cannot assist the student teachers with the situation to practical classroom ptoblems.

Therefore, it can be concluded that teacher confidence and ability to teach maths will remain low until attetion is focused on the problem and until concrete curriculum are worked out for teacher training in maths.

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CHAPTER IV

A- The Problem

In Somalia a Universal Primary Education was introduced in 1975. Thousands of children are however not yet receiving the kind of education which enables them to play their role in the building of the new society . The quantitative expansion in education has shown a disquieting development with regard to quality. The problems that therefore affect the success of the implementation of math curriculum in the primary schools are as follows:

1- Classes are over crowded.

2- Lack of Visual aids.

3- Lack of enough text-books in the schools.

4- The training of the teachers of the primary schools is not well planned.

5- Language problems still exists.

These problems have not been reduced the interest of the students in the learning of mathematics.

B- Findings:-

1- The first issue was to find the confidence and ability of the teachers to teach modern maths. Data collection and analysis were not regarded as appropriate in this case as its felt that responses to such quetions would not be reliable. Teachers would consider themselves being evaluated and thus would rate their confidence and ability as high,even though classroom performance and student attainment would indicate otherwise.

It can be stated as a generalization that one is confident when teaching content that has been mastered. To day, the fact is that the majority of teachers have not mastered the content of maths therefore cannot teach it. (see table 4) for evidence of teacher ability in maths.

However a teacher who is not sure of his maths can be helped to a great extent by detailed self-instructional teachers guides. These are not available and therefore the teacher is left stranded.

2- The second issue was to find out the interest of the students towards mathematics. and it was found 90% of the students have the interest to study mathematics as well as they can.

3- The third issue was to find out the students and teachers examination performance and it was found that the teachers performances in their exams were very bad and these bad performances came from the training given by the teachers when they were in the instituitws . Actually the lenght of the training was one year but later it has been turned to be two years for the primary teachers.

The quality of education largely dependson the quality of the teaching force. There used to be a time when teachers of math were quite satisfied with their performance in math and also the students performance in math and many other subjects.

After the Somali language was written and a Universal education in the primary Schools was found,then came the serious shortage of teachers in the primary schools.

As a permanent remedy to the situation, young teachers had to be recruited in the instituites to train them as teachers for the primary schools. The curriculum for such courses was not clear, no specific objectives have been outlined.

Obviously the lack of clear objectives in the teaching of maths in Somalia seriously accounts for the poor performance brought out by both the students and teachers. With objectives you can evaluate quite easily and determine at where you have failed and why.

Unless they formulate their objectives teachers tend to be concerned merely with the content of instruction and to ignore whatthe students should learn to do with that content "What to do" is ignored tend to assume that they need to memorize content.

C- Recomandations:

1- Concerning the programme of a training course, this should be well planned and developed to cater for differences in accademic level and previous experience among students.

These basic charateristic should be as follows:

a- The programme should be the result of systematic analysisand planing. The purpose of the programme is to generate effective teachers who now how to promote learning among pupils.

Having decided these objectives the next step is to determine how to achieve it.

b- The objectives of a teacher training programme should clearly defined in terms of the skills needed by the teachers. In addition the behaviour which is considered evidence of teaching competency should be spelled out so that it can be easily assesed.

c- The programme should be adapted to individuals needs of each trainee in terms of his previous level of achievement, his rate of learning and his particular subject preferences.

d- Theprogramme should not be intended to produce stereotyped teachers. Instead, a prospective teacher must be expected to bring together various componemts that make up professional competence and from these develop a style best suited to himself.

e- Before being allowed to teach in a real classroom the trainee must show under both laboratory and supervised conditions his ability to bring desired learning outcomes by pupils.

The programme for teachers training should be organized into three phases:

a- A foundation phase.

b- Laboratory phase and

c- Practical phase.

Appendix One

Questionaire for Primary one Teachers.

In completing this questionnaire, you are kindly asked to do as open and frank as much as possible.
The information you provide will be treated in strict confidence.
Do not write your name on this questionnaire.

Section A

Information about teacher

1. Name of the schoolh
2. Sex of the teacher
   a) Male
   b) Female
3. Number of years of teaching experience.....
4. What is your professional qualification?
   i) National teacher education ——— what year ———
   ii) El-Jale TTI: What year ———————
   iii) Halane TTI ——————— What year ———————
5. What inservice courses have you attended since leaving training institute and how long were the courses?

	Tick for course	Length of time	Date
1. Mathematics			
2. Science (Chem)			
3. Education			
4. History			
5. English			
6. Physics			
7. None			

6. Do you teach all subjects in your lower primary class?

1- Yes

2- No

7. What are your three least favourite subjects to teach?

i. _____

ii. _____

iii. _____

8. What are your three most favourite subjects to teach?

i. _____

ii. _____

iii. _____

9. Do you like teaching mathematics?

1- Yes

2- No

10. Childern find modern mathematics more interesting?

1- Yes

2- No

11. Do you need inservice courses in math?

1- Yes

2- No

12. Are the teaching materials enough?

1- Yes

2- No

Section B

Information about teaching

Which of the following have been your problems in teaching the present primary one mathematics course? Tick the appropriate space.

i. Some of the topics are new to me and I have not understood them.

1- Yes

2- No

ii. Some of the suggested materials are not available in school.

1- Yes

2- No

iii. Suitable furniture is not available in my classroom.

1- Yes

2- No

iv. I do not find it easy to make up more exercises to Suplement (add to) those given in the pupils text-bbok.

1- Yes

2- No

v. I do not have any one to help me when I face difficulties in solving problems.

1- Yes

2- No

Appendix two

Observation and assessment guide to evaluating primary one mathematics teaching.

A- The Teachers:-

Lesson notes:

1- Appropriate choice of teaching learning activities.

2- Appropriate choice of practice examples.

3- Appropriate choice of evaluation.

B- Classroom Envirement:

1- Size of Classroom.

2- Suitibility of sitting arrangement.

3- Availability of neccessary teaching aids.

C- Teaching process:-

1- Effective use of blackboard

2- Ability to arouse pupils interest in the lesson.

Score key

Very Good _____

Good _____

Average _____

Poor _____

Very poor _____

Appendix Three

Ac-hievement test items

Primary One(Oral questions)

I- What is:-

1- (4+3) =

2- (4+9)

3- (2+8) =

4- (10-3) =

5- (9-4) =

6- (4X2) =

7- (3X2) =

8- (4-2) , =

9- (2X2) =

10- (3-3) =

II (Writtenà

1) 12+5 =

2) 13+4 =

3) 16-8 =

4) 15-7 =

5) 3 + = 4

6) 19- = 12

7) 41 + = 49

8) 14 - = 8

9) 2 X = 8

10) 4 X = 8

11) 2 X = 10

11à 2 X = 12

13) 2 X 8 =

14) 2 X = 14

15) 3 X = 15

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